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ABSTRACT

This study attempts a broad look at young children's sex typing of job classifications by examining the relationship of cognitive classification skills, age and sex to a 3-dimensional measure of children's job attributions, service preferences, and personal vocation choices. These dimensions were measured, respectively, by the following questions: "Who do you think would like that job?", "If you needed that job done for you, would you choose a woman, a man, or either one?", and "Would you like to do that job?" A total of 120 children from early preschool, late preschool, second grade and fourth grade responded to these questions for each of nine jobs. They also stated a free-choice job preference. A subsample of 48 children completed a cognitive classification measure. As age increased, sex typing increased for attributions and service preferences. Match scores between attributions and census reality, service preferences and reality, and attributions and service preferences also increased with age, while the use of sex typed categories in service preferences decreased. Girls were less sex typed than boys on attributions; on service preferences, girls were more sex typed for female jobs and boys for male jobs. The match between service preferences and reality and between attributions and personal job choices was higher for boys than for girls. On free choice items, girls' job choices were more restricted than boys', while boys' responses were more culturally appropriate; on fixed-choice items, girls expressed interest in female jobs and boys in male jobs. Sex differences were also found on free choice and fixed choice job preferences. Age, rather than classification skill, accounted for more variance in the sex typing measures.
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A MULTIDIMENSIONAL VIEW OF CHILDREN'S
SEX-TYPING OF OCCUPATIONS

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A MULTIDIMENSIONAL VIEW OF CHILDREN'S
SEX-TYPING OF OCCUPATIONS

Abstract

One hundred twenty children from early preschool, late preschool, second grade and fourth grade responded to an instrument measuring their sex-typing of attribution, service preference, and personal job choice dimensions for each of nine jobs. They also stated a free-choice job preference. A subsample of 48 children also completed a cognitive classification measure. With age, sex-typing increased for attributions and service preferences; the match scores between attributions and census reality, service preferences and reality, and attributions and service preferences increased; and the use of sex-typed categories in service preferences decreased. Girls were less sex-typed than boys on attributions; on service preferences, girls were more sex-typed for female jobs and boys for male jobs. Boys' match scores between service preferences and reality and between attributions and personal job choices were higher. On free-choice items, girls' job choices were more restricted than boys', while boys' responses were more culturally-appropriate; on fixed-choice items, girls expressed interest in female jobs and boys in male jobs. Age, rather than classification skill, accounted for more variance in the sex-typing measures.

During the preschool and elementary school years, children acquire initial knowledge of both work and sex roles. How flexible or rigid these early role definitions are may have important consequences for later vocational information-seeking and choice. A social learning model (e.g., Mischel, 1966) has guided much of the work to date on children's learning of work and sex roles. In general, this model considers exposure over time to the environmental forces of differential reinforcement and modeling, rather than cognitive maturity, as the primary mechanisms of role learning.

The results of social learning research show the influence of work/vocational learning at two basic levels. First, this research indicates that boys and girls, as early as preschool age, differ in their expressed personal vocational aspirations. In most studies, girls express interest in fewer and more traditionally feminine jobs in contrast to the wider ranging, often adventure-some, and traditionally masculine choices of boys (Beuf, 1974; Siegel, 1973). Secondly, on a more general level, both sexes attribute many job skills and/or preferences exclusively to men or to women. This generalized sex-typing has been found in several studies to be more marked in younger than older elementary school children. Shephard and Hess (1975), for example, looked at age patterns in the extent of job stereotyping at kindergarten, 8th grade, college, and adult levels. They found increasing liberality, defined operationally as the expressed belief that both sexes should perform a job, from kindergarten to 8th grade and college, with a marked decrease at adult levels. Garrett, Ein and Tremaine (1977) also reported increasing flexibility of job stereotyping from early to late elementary school, but found this trend primarily for jobs the children attributed to men and both men and women, not those attributed to women. Shephard and Hess (1975) and Garrett, Ein and Tremaine (1977) also found sex differences in the stereotyping of jobs. In the Shephard and Hess study, females from all age groups except kindergarten were significantly

more liberal than males. That is, females responded more often that both sexes should do a job. Garrett, Ein and Tremaine found a more complex pattern; each sex saw the jobs the children attributed to men and to both women and men as significantly more appropriate for its own sex. Neither sex emerged as more flexible in terms of their overall sex-typing of jobs.

Most of the studies discussed have examined a single aspect of job sex-typing, using only one method of inquiry: either free choice personal job preference questions ("what do you want to be when you grow up?") or fixed choice items about general job attributions ("who do you think can or should be a [job name]?"). With this background it is now possible to look at other dimensions in the developmental process and to examine the inter-relationships among them, using several modes of inquiry within a single study. One potentially important dimension not studied to date is that of service preference: who children would choose to have perform a job for them. Such a question taps attitudes regarding attributions of skill and interest, but in a more personalized and concrete form that may elicit developmental differences not evidenced in asking who can do a job. The exploration of such a dimension also permits more complex examination of the inter-relationships among the many dimensions of job sex-typing.

As stated earlier, a social learning approach has been the basis for much of the research to date in this field. It is likely that the predominance of one model has limited the variables and methods utilized. As Emmerich (1973) has suggested, sex role research is needed which incorporates alternative theories into a common research framework. Kohlberg's cognitive developmental approach (Kohlberg, 1966) to sex-role development shows potential relevance to further understanding of occupational sex-typing. This Piagetian-based approach considers qualitative and structural changes in gender associations and behaviors, due primarily to cognitive changes rather than mere exposure to the

environment across time. Sex-role stereotypes are a method of classifying people into categories based on the attribute of gender. Thus, classification skill is a cognitive variable that could directly influence sex-typing attitudes and behaviors. The development of increasingly complex classification systems could influence how the categories of jobs and gender, for example, are organized and inter-related. This cognitive variable could account for systematic differences in at least some of the aspects of children's sex-typing of jobs. Little or no research to date has utilized this potentially important variable, and it is one of the purposes of this study to explore its utility.

This study involves a broader look at job sex-typing in young children by examining the relationship of cognitive classification skills as well as age and sex to a multidimensional measure of children's job attributions, service preferences, and personal vocation choices.

METHOD

Subjects

The sample included 15 girls and 15 boys at each of four age levels (early preschool, late preschool, 2nd grade and 4th grade) from five schools in two midwestern towns. The 120 children were randomly selected, stratifying for sex, grade and school. From this sample, 48 children (six girls and six boys at each age level) were selected to complete the classification portion of the study as well.

Instruments

Nine common jobs were used in the sex-typing instrument. According to both census data (1973) and past stereotyping research with children and adults (e.g., Shephard and Hess, 1975), three of these jobs are culturally linked with women (nurse, secretary, babysitter), three with men (doctor, truck driver, police officer), and three are considered neutral (clerk, movie star, writer). For

each job, children were asked for the following information:

- (1) Job Attribution -- who do you think would like that job?
- (2) Service Preference -- if you needed that job done for you, would you choose a woman, a man, or either one?
- (3) Personal Job Preference -- would you like to do that job?

In addition, the children also were asked for a free-choice job preference, under an own-sex (what of all possible jobs would you like to do?) and an opposite-sex (what job would you choose if you were of the opposite sex?) condition. Both conditions were included because Beuf (1974) found they elicited differing reactions in boys and in girls. Thus, the sex-typing instrument assessed several possible dimensions of job sex-typing.

The classification measure consisted of a hierarchical series of standardized color-shape classification tests, including consistent and exhaustive sorting, multiple class membership, whole is the sum of its parts, and conservation of hierarchy (Kofsky, 1966). These tasks were designed to assess the level of Piagetian classificatory skills of children, with a possible range of scores from 0 to 5.

Procedures

Female and male interviewers orally administered the sex-typing instrument to the individual preschool children. For the attribution and service preference questions, the children could either respond verbally or point to one of three pictures containing line drawings of female faces or male faces or both female and male faces. The 2nd and 4th graders were tested in small groups. Female and male interviewers read the questions aloud, and the children responded by marking their answers on a form containing line drawings comparable to those used with the preschool children.

All of the children who participated in the classification portion of this study were tested individually.

RESULTS

Job attribution, service preference, and personal job choice were analyzed using primarily analysis of variance and discriminant analysis techniques. The design was a 4 (trend analysis on grade: early preschool, late preschool, 2nd grade and 4th grade) by 2 (sex: male and female) full factorial. Results for each dimension are described below.

Job Attribution

Each child's response to "Who would like to be [occupation name] the best?" was coded as 1-men, 2-both men and women (neutral), or 3-women.

To determine the degree to which children's attributions were sex-typed, each child was given three scores: one for his/her attribution of male jobs, one for female jobs, and one for neutral jobs. Each score was formed by averaging the child's responses for that set of jobs. Using student's t , the attribution of each set of jobs was tested against the population neutral mean of 2.0. The experiment-wise alpha level was set at .05 by dividing this alpha by the number of comparisons to be made (Kirk, 1968), resulting in a per comparison alpha of .002. Results for all t -tests are in Table 1.

For the male jobs, only the means for 2nd grade boys ($t=-5.34$) and girls ($t=-4.32$) and 4th grade boys ($t=-5.67$) differed significantly from the population neutral mean. Children in these groups attributed these jobs to males.

All of the children's means for the neutral jobs were within the neutral range.

Means for the female jobs were not significantly different from the neutral for either the preschool children or the 2nd grade boys. The other children identified these jobs with women (2nd grade girls' $t=6.41$; 4th grade boys' $t=3.94$; 4th grade girls' $t=8.22$).

Multivariate analysis of variance (MANOVA) was used to examine age and sex effects in the children's attributions. Linear age was significant ($\eta^2=.233$, $p\leq.001$, $df: s=1.0$, $m=3.5$, $n=50.5$), sharing 23.3 percent of the variance with the dependent variables. In general, as age increased, the degree to which male and female jobs were attributed respectively to men and women increased. The standardized discriminant function coefficients indicated that the neutral jobs were not important in this effect. Discriminant scores based on these coefficients were computed to present the linear age trends; their means and standard deviations are presented in Table 2. The quadratic and cubic age effects were not significant.

Sex was also significant in job attribution ($\eta^2=.162$, $p\leq.05$, $df: s=1.0$, $m=3.5$, $n=50.5$), accounting for 16.2 percent of the variance. The girls were less sex-typed on both male and female jobs than the boys. For neutral jobs, each sex tended to attribute the jobs to their own sex. Discriminant scores based on the discriminant function coefficients were formed to present the sex trends (see Table 2).

No age by sex interaction was significant.

Each child also was given a single overall score that reflected the degree of match between her/his attributions and the cultural linkages reported in the Department of Labor census reports (1973). The child was given a 1 for each match and a 0 for a mismatch, then these scores were summed for a possible range of 0 to 9. Means and standard deviations are presented in Table 3. A univariate analysis of variance (ANOVA) was performed on this score. Linear age was significant ($F=20.896$, $p\leq.001$, $df=1, 112$). The cubic age effect was also significant ($F=9.127$, $p\leq.05$, $df=1, 112$). Late preschool children had slightly higher match scores than early preschool children; the elementary school children's scores were approximately equal, and higher than those of the preschool children.

The main effect for sex was not significant; the sex by age interactions were not significant.

A third score was developed to indicate the number of times a sex-typed response (i.e., "men" or "women") was given in the job attribution responses. This ANOVA resulted in no significance in the age or sex effects or in the age by sex interactions.

Service Preference

The second question asked of the children was who they would rather have perform each job function for them. Responses were coded as a man (=1), either a man or a woman (=2), or a woman (=3).

To determine whether the children's service preferences were differentiated according to sex, each child received another three scores: one which averaged his/her responses to the female jobs, one to male jobs, and one to the neutral jobs. A studentized t was again used to compare these scores against the neutral score (see Table 1).

The t on children's service preference for male jobs shows a very interesting pattern by sex. The youngest boys and all grade-groups of girls were neutral in their responses, indicating that they would prefer either men or women in these positions. The late preschool ($t=-4.00$), 2nd grade ($t=-6.31$), and 4th grade boys ($t=-4.16$) preferred to have contact with men in these jobs.

For neutral jobs, all responses were neutral.

Only elementary school girls (2nd grade $t=5.06$; 4th grade $t=4.46$) were significantly sex-typed in their service preference for female jobs; they preferred women in these positions.

As with job attribution, the MANOVA used to examine age and sex effects showed that linear age was significant ($q=.175$, $p<.05$, $df: s=1.0$, $m=3.5$, $n=50.5$), accounting for 17.5 percent of the variance. In general, children's sex-typing

of service preferences for male and female jobs increased with age, while the preferences for neutral jobs moved toward male. Discriminant scores based on the discriminant function coefficients from this analysis were formed to present the linear age trends (see Table 2). Quadratic and cubic age effects were not significant.

The sex effect was also significant in the multivariate analysis of service preference ($\theta=.448$, $p<.001$, $df: s=1.0, m=3.5, n=50.5$), accounting for 44.8 percent of the variance. The boys were more sex-typed in their service preferences for male jobs, while the girls were more sex-typed for female jobs. Neutral jobs did not contribute greatly to the sex effect (see Table 3).

The age by sex interactions were not significant.

Again each child was given an overall score, ranging from 0 to 9, reflecting the match between their sex-typing of service preferences and the Department of Labor census reports (1973) of cultural linkages. The linear age effect on the resulting univariate ANOVA was significant ($F=16.657$, $p<.001$, $df=1, 112$). The children's preferences were increasingly closer to census reality from early preschool to 2nd grade, but the 4th grade scores approximately equaled those of the 2nd graders (see Table 3). Quadratic and cubic effects were not significant.

The sex effect was also significant ($F=6.371$, $p<.05$, $df=1, 112$). The boys' match of service preference with census reality was higher than the girls' match.

The age by sex interactions were not significant.

As with job attribution, each child was given a score for the number of times s/he gave a sex-typed (i.e., "women" or "men") response. The univariate linear age effect was significant ($F=6.905$, $p<.01$, $df=1, 112$). Use of the sex-typed categories for service preference decreased with age (see Table 3). Quadratic and cubic effects were not significant.

Neither the sex effect nor the age by sex interactions were significant.

Each child was then given a score from 0 to 9 indicating the number of times her/his job attribution and service preference matched. In this univariate analysis, linear age was significant ($F=4.271$, $p \leq .05$, $df=1, 112$). In general, older children were more consistent in these two types of responses (see Table 3). Quadratic and cubic effects were not significant.

The sex effect and the age by sex interactions were not significant.

The scores for job attribution and service preference were compared, by a student's t for correlated samples, to determine whether the children sex-typed jobs more on one dimension than on the other. Again, the experiment-wise alpha level was set at .05.

For the female jobs, late preschool ($t=4.61$) and 2nd grade ($t=5.56$) boys preferred women in these jobs less often than they attributed the jobs to women. The other results were not significant.

For male jobs, girls at all age levels preferred to see men in the jobs less often than they attributed the jobs to men (early preschool, $t=-27.83$; late preschool, $t=-6.36$; 2nd grade, $t=-20.11$; 4th grade, $t=-3.94$). The other results were not significant.

For neutral jobs, 4th grade girls preferred women in the jobs more often than they attributed them to women ($t=-4.51$). The other results were not significant.

Personal Job Choice

The third question asked of each child was, "Would you like to be a [occupation name] when you grow up?" The response was coded 1=yes, 2=no.

MANOVA was used to analyze age and sex effects. Linear age was significant ($\eta^2=.257$, $p \leq .001$, $df: s=1.0, m=3.5, n=50.5$), sharing 25.7 percent of the variance with the nine dependent variables. Quadratic age was also significant

($\eta^2=.149$, $p \leq .05$, df : $s=1.0$, $m=3.5$, $n=50.5$), sharing 14.9 percent of the variance. The youngest preschool children tended to respond that they would like to do almost every job. Then at late preschool and 2nd grade, the children began responding negatively to all three categories of jobs. As age increased, the number of "no" responses increased (see Table 2). Cubic age was not significant.

Sex was also significant ($\eta^2=.510$, $p \leq .001$, df : $s=1.0$, $m=3.5$, $n=50.5$), accounting for 51 percent of the variance. The boys were more likely to respond positively to male jobs, the girls to female jobs (see Table 2).

The age by sex interactions were not significant.

The children were also given an inter-item consistency score, ranging from 0 to 9; between job attribution and personal job choice. The two were considered to match if s/he attributed a job to his/her sex or to both sexes (the neutral response) and said s/he would like to do that job.

For this univariate analysis, the sex effect was significant ($F=19.031$, $p \leq .001$, $df=1$, 112). The boys matched job attribution and personal job choice more often than girls (see Table 3).

No age effect or age by sex interaction was significant.

The last questions asked of the children were what job they would like to have given a free choice of any job they could think of (own-sex condition), and what they would like to be if they were the opposite sex (opposite-sex condition). These were coded as own-sex dominated (1), neutral (2), or opposite-sex dominated (3), according to the sex for which the question was asked. Thus, if a girl responded that she would like to be a nurse and if she were a boy she would like to be a doctor, she received scores of 1 and 1.

In the own-sex condition, the sex effect was significant in the univariate test ($F=15.324$, $p \leq .001$, $df=1$, 112). Boys were much more likely to make culturally sex-appropriate choices than girls (see Table 3), although girls'

range of choices was more limited.

The age effects were not significant; neither were the age by sex interactions.

In the opposite-sex condition, sex was significant ($F=4.109$, $p<.05$, $df=1, 112$). Girls were more likely to make sex-appropriate choices for boys than boys were for girls (see Table 3).

The age effects and the age by sex interactions were not significant.

Age or Classification Skill?

To determine whether classification skill or age was the more powerful source of variance in the sex-typing measures, variance estimates were obtained from correlational analysis on the data from the subsample of 48 children who were given the sex-typing measures and the classification measure (see Table 4). Age accounted for more variance than classification skill in nine of the measures, classification skill accounted for more in one, and the two were equal in one. Using a Wilcoxon matched-pairs signed-ranks test, age accounted for significantly more variance in the measures than did classification skill ($T=2$, $N=10$, $p<.01$).

DISCUSSION

Results in general support, extend, and clarify developmental findings of previous studies. A complex pattern of age differences was found across several dimensions, thus indicating that important changes are taking place from preschool through elementary ages in the nature and degree of job sex-typing. Preschoolers, for example, did not attribute culturally-defined female jobs to females or male jobs to males, while elementary school respondents did. Similarly, the younger age groups did not as often show a preference for occupational services from members of their own sex or from members of one sex only. Preschoolers' job attribution and service preference

responses were thus significantly less likely to match socio-cultural realities as to who does certain jobs in our society. Change on these dimensions reached a plateau at the second grade level with little or no increase from second to fourth grade.

Although younger children did not as often concur with socio-cultural norms regarding the sex-appropriateness of certain jobs, they used the sex-typed response choices more often than older children on the service preference items. Thus, it is too simplistic to say that older children are more sex-typed than preschoolers: they "know" the cultural sex-typing norms more accurately than preschoolers, but they may also be more flexible in applying sex-typed categorizations under conditions such as service preference requests. What is suggested is a sorting process whereby preschool children have learned early that the world of work is sex-typed but not how to match the gender divisions of our society. The mechanism is in place, but must be refined significantly over the following years.

Part of that refinement and sorting process also appears to be an increasing consistency in job attribution and service preference responses, with older children giving the same answers to both dimensions and matching census reality better in both dimensions for a given job. In addition, older children sorted jobs more stringently as to their appeal as a personal job choice, with more jobs being rejected. The finding that older children reject more jobs may be a part of their increasing realism in considering job choices. Since older children more accurately reflect socio-cultural realities regarding the gender divisions in the world of work, the nature of children's job aspirations may be changing along a fantasy/reality continuum that includes, among other components, sex-role stereotypes in our society.

Several complex patterns of sex differences also emerged from this study. Although boys were more sex-typed in their attributions, girls were more

likely to sex-type their service preferences for female jobs and boys for male jobs. Girls were more likely to say "yes" to female personal job choices, while boys were more likely to affirm their interest in male personal job choices. When asked what job they wanted when they grew up, boys made more sex-appropriate choices and could not or would not accurately project a girl's choice. Girls' choices were more restricted in the range of jobs mentioned, but their choices were not as culturally sex-appropriate. Thus, boys were more sex-typed on a free-response measure of job stereotyping, while boys and girls were egocentric in their sex-typing on a forced-choice measure.

With boys, service preference responses more closely matched adult cultural norms than those of girls, although there was no sex difference on attribution items. Boys also showed a greater consistency between their job attributions and personal job choices, more carefully avoiding jobs they themselves attributed to women.

In addition, the sexes showed an interesting egocentric trend in their differential sex-typing of attributions and service preferences. Each sex tended to be more appropriately sex-typed in their attributions of the opposite-sex jobs than they were in their service preferences for those jobs. For example, girls preferred services from men in male jobs less often than they attributed those jobs to men.

Although these sex differences were significant, it should be emphasized that the sexes agreed on several items. They were similar in overall match to cultural norms on job attributions, in the use of sex-typed categories in attribution and service preference, and in consistency between job attribution and service preference responses. Although these results do not "prove" the null hypothesis, they suggest that a body of cultural knowledge about jobs is being transmitted with equal effectiveness to both sexes. This knowledge apparently, however, places greater pressure on boys to avoid opposite-sex

choices. This difference is especially clear for free-choice jobs, where both girls and boys made more appropriate choices for boys, but also is apparent in the boys' closer adherence to sex-typed cultural norms on job attribution. Boys' job choices on free choice personal job questions may have been more wide-ranging, but that range is, in most cases, clearly limited to currently male-dominated jobs.

Age, not classification skill, was clearly a more useful variable in accounting for variation in job sex-typing. The total pattern of results indicates, as Urberg and Labouvie-Vief (1976) have argued, that age is indeed an important variable in the study of sex-role stereotyping. This finding is in many ways consistent with the social learning approach, which argues that older children differ because they have had longer exposure to cultural norms and other environmental influences over time.

In terms of cognitive approaches to sex-typing, more work is needed to uncover other modes of measurement and/or other cognitive variables that may prove more fruitful than the classification variable used here. Within the present study a consideration of cognitive development may be seen to be useful in understanding some of the results. One example is the finding that older children show more consistency between job attribution and service preference responses. A further example might be the decrease with age in the use of sex-typed response choices for service preferences, which supports the Garrett, Ein, and Tremaine (1977) and Shephard and Hess (1975) findings regarding possible age increases in the flexibility of job sex-typing. Some aspect of cognitive maturity may help to account for such increases in flexibility and consistency of responses.

The present study clearly shows the need for further efforts at a multidimensional approach to measurement in the area of job sex-typing. It also suggests that research in the area could greatly benefit from an expansion

beyond the either/or approach of social learning versus cognitive developmental methodology. Knowledge in this area will likely remain fragmented, incomplete, and even contradictory until researchers and theoreticians attempt to devise models that can account for the complex patterns of differing results according to age, sex, mode of inquiry, and specific dimension of job sex-typing under study.

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Table 1. Means (and standard deviations) by sex and age
for attribution and service preference responses⁺

Children		Attribution			Service Preference			Attribution-Service Preference		
		Female	Neutral	Male	Female	Neutral	Male	Female	Neutral	Male
Early Preschool:	Boys (n=15)	2.222 (.799)	1.911 (.639)	1.489 (.731)	2.000 (.858)	1.889 (.651)	1.644 (.748)	0.222	0.022	-0.155
	Girls (n=15)	2.178 (.782)	2.022 (.727)	1.689 (.797)	2.134 (.820)	2.245 (.748)	2.311 (.768)	0.044	-0.222	-0.622*
Late Preschool:	Boys (n=15)	2.467 (.853)	1.822 (.752)	1.400 (.692)	1.956 (.830)	1.800 (.730)	1.400* (.583)	0.511*	0.022	0.000
	Girls (n=15)	2.356 (.748)	1.933 (.756)	1.622 (.721)	2.222 (.769)	2.133 (.725)	2.133 (.762)	0.133	-0.200	-0.511*
2nd Grade:	Boys (n=15)	2.600 (.657)	1.822 (.618)	1.267* (.532)	1.911 (.738)	1.733 (.595)	1.267* (.450)	0.689*	0.089	0.000
	Girls (n=14)	2.762* (.445)	2.048 (.508)	1.405* (.516)	2.666* (.493)	2.286 (.472)	1.881 (.728)	0.096	-0.238	-0.480*
4th Grade:	Boys (n=15)	2.621* (.617)	1.911 (.560)	1.311* (.471)	2.022 (.817)	1.867 (.544)	1.378* (.579)	0.600	0.044	-0.066
	Girls (n=15)	2.690* (.471)	2.067 (.450)	1.600 (.658)	2.579* (.503)	2.155 (.429)	2.000 (.579)	0.111	-0.039*	-0.400*

+ : 1=men; 2=both (attributions), either (preferences); 3=women

* $p \leq .05$ (experiment-wise); $p \leq .002$ (comparison-wise); $df=14$ except for 2nd grade girls, where $df=13$

Table 2. Means (and standard deviations) of discriminant functions scores from multivariate analyses of attribution, service preference, and personal job choice responses

Responses	Jobs	Age				Sex			
		Early Preschool	Late Preschool	2nd Grade	4th Grade	Higher means indicate more responses	Boys	Girls	Higher means indicate more responses
Attribution	Male	1.249 (.616)	1.077 (.410)	1.020 (.300)	0.981 (.330)	Female	1.993 (.848)	2.342 (.755)	Female
	Neutral	Not important in this effect					1.667 (.670)	1.964 (.720)	Female
	Female	-4.243 (.897)	-4.603 (1.207)	-5.180 (.831)	-5.335 (.709)	Male*	-1.006 (.577)	-.837 (.636)	Male*
Service Preference	Male	2.985 (.718)	2.778 (.787)	2.419 (.669)	2.728 (.756)	Female	2.889 (.885)	4.237 (.944)	Female
	Neutral	0.417 (.415)	0.496 (.406)	0.237 (.486)	0.325 (.266)	Female	Not important		
	Female	-2.905 (.908)	-2.938 (.916)	-3.307 (.915)	-3.375 (.716)	Male*	1.583 (.367)	1.916 (.458)	Female
Personal Job Choice	Male	1.275 (.415)	1.345 (.523)	1.607 (.499)	1.815 (.408)	No	-3.454 (.859)	-3.696 (.999)	Yes*
	Neutral	0.376 (.298)	.431 (.421)	.463 (.234)	.710 (.439)	No	Not important		
	Female	1.899 (.578)	2.340 (.592)	2.435 (.606)	2.573 (.584)	No	5.770 (1.027)	4.145 (1.166)	No

*On a number line, the closer a negative number is to 0, the larger that number is.

Table 3. Means (and standard deviations) by age and sex for significant univariate scores

Type of Score	Age				Sex	
	Early Preschool	Late Preschool	2nd Grade	4th Grade	Boys	Girls
Match of attribution with census data	4.633 (1.564)	4.900 (1.626)	6.200 (1.448)	6.067 (1.413)	not significant	
Match of service prefer- ence with census data	3.633 (1.586)	3.833 (1.511)	4.933 (1.507)	4.833 (1.147)	4.633 (1.329)	3.983 (1.705)
Number of sex-typed ser- vice preference responses	5.600 (2.094)	5.400 (2.527)	4.633 (2.470)	4.133 (2.542)	not significant	
Match of service prefer- ence and attribution	5.200 (1.690)	4.700 (1.841)	5.500 (1.978)	5.967 (1.791)	not significant	
Match of attribution with personal job choice		not significant			0.711 (.371)	0.432 (.337)
Cultural appropriateness of own-sex free choice		not significant			1.107* (.310)	1.534 (.743)
Cultural appropriateness of opposite-sex free choice		not significant			1.691 (.921)	1.345* (.576)

*Low score is sex-appropriate.

Table 4. Comparison of variance accounted for in the sex-typing measures by age and classification skill.

<u>Sex-typing Measure</u>	<u>Variance Accounted For By</u>	
	<u>Age*</u>	<u>Classification Skill*</u>
Job Attributions (multivariate)	36.3%	27.6%
Match of attributions with census data	6.6%	4.6%
Use of sex-typed categories in attributions	20.8%	7.5%
Service preferences (multivariate)	33.5%	28.8%
Match of service preferences with census data	20.2%	11.5%
Use of sex-typed categories in service preferences	16.2%	6.5%
Match of attributions and service preferences	4.2%	0.1%
Personal job choices (multivariate)	57.0%	47.4%
Match of attributions and personal job choices	3.4%	3.2%
Free job choice: own sex	1.5%	1.5%
Free job choice: opposite sex	0.0%	1.0%

*Age had four levels: early preschool, late preschool, 2nd grade and 4th grade. Classification skill had a possible range of 0 to 5, but the actual range for this sample was 1 to 5.